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## PATENT ABSTRACTS OF JAPAN

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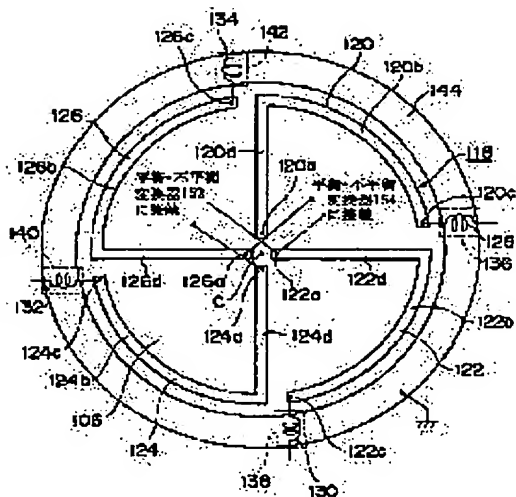
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## (54) PLASMA TREATMENT DEVICE

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide a plasma treatment device capable of generating plasma by electromagnetic wave of high frequency.

SOLUTION: An antenna 118 of non-grounded type is disposed on a dielectric wall 106 forming the ceiling part of a treatment chamber of an etching device. The antenna 118 comprises first to fourth antenna elements 120, 122, 124, 126 each having an electrical length of  $\lambda/4$  (where  $\lambda$  is the wavelength of high-frequency power) and disposed point-symmetrically to each other about a reference point C on the dielectric wall 106. When power of high frequency of 100 MHz or higher with a phase shifted by  $90^\circ$  for every neighboring elements is applied to the first to fourth antenna elements 120 to 126 pairs in point-symmetry of the first to fourth antenna elements 120 to 126 resonate at  $\lambda/2$ , and an electromagnetic wave of the same frequency as the power is oscillated and introduced into the treatment chamber via the dielectric wall 106. A treatment gas is dissociated into plasma by the electromagnetic wave, and a wafer in the treatment chamber is etched.



## LEGAL STATUS

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